ABSTRACT

BACKGROUND:

Acute appendicitis is one of the most common surgical emergencies worldwide, the diagnosis of which is still a challenging job for the surgeon. Both delayed diagnosis resulting in perforation (20%) and negative appendectomy (2-30%) have their own complications. Hence there is need for an accurate preoperative diagnosis. Even though CT has a high sensitivity and specificity in diagnosing appendicitis, the cost, availability and time delay become its limitations. Several scoring systems using clinical, laboratory data have been designed to diagnose acute appendicitis.

An ideal scoring system would increase the accuracy of decision making and at the same time reduces the need of potentially harmful and expensive imaging. The scoring system must recognize patients in need of urgent surgery without delay and on the other hand, must avoid the unnecessary risks and cost of negative appendectomy. More than 10 such systems have been developed since the beginning of 1980s. In our study we consider 4 such scoring systems. The aim of our study is to assess and compare the diagnostic accuracy of these scoring systems on South Indian population and to study their role in diagnosing a case of acute appendicitis.

AIMS & OBJECTIVES:

1. To assess the diagnostic value of different scoring systems in acute appendicitis and their role in improving accuracy.
2. To identify the most reliable scoring system for South Indian population.

METHODOLOGY:

This is a prospective and observational study. Patients admitted in Rajiv Gandhi Government General Hospital with the right iliac fossa pain suspicious of acute appendicitis are included in the study. Detailed clinical history is taken and physical examination is done for each patient. All patients underwent laboratory investigations such as complete blood count, blood urea, serum creatinine and electrolytes, urine routine, C-reactive protein and imaging tests like Chest X ray, Abdomen X ray erect, Ultrasound abdomen and pelvis. Using the above data, the probability of acute appendicitis is calculated using the Alvarado, Tzanaki, RIPASA and AIR scores.

Patients will be taken up for emergency/elective appendicectomy based on the surgeon's clinical judgement. The intraoperative findings will be noted. Intraoperatively normal appearing appendix and presence of other diagnosis will be excluded from the study. Following surgery, the histopathological reports of the patients will be collected. The various preoperative scores and the HPE reports will be correlated to calculate the Sensitivity, Specificity, PPV, NPV,

diagnostic accuracy and negative appendicectomy rates. This will prove the validity of scoring systems in the diagnosis of acute appendicitis and provides the most reliable system applicable in South Indian population.

RESULTS:

The following results are obtained.

1. Out of 100 patients, majority belong to the age group 20 – 30 years with a female sex predominance.
2. Majority of the patients in the study have Alvarado scores of 7 and above, Tzanaki scores of 10 and above, RIPASA scores of 8.5 and above and AIR scores of 9 and above.
3. Sensitivity and Specificity of various scores are as follows:

SCORE	SENSITIVITY	SPECIFICITY
ALVARADO	84.61 %	82.35 %
TZANAKI	100 %	23.5 %
RIPASA	97.5 %	64.7 %
AIR	87.9 %	82.35 %

4. Positive and Negative predictive value of various scores are as follows:

SCORE	PPV	NPV
ALVARADO	96.25 %	70 %
TZANAKI	86.45 %	100 %
RIPASA	93.1 %	84.6 %
AIR	96.05 %	58.33 %

5. In 17 patients, appendix is not inflamed intraoperatively and among these only 4 have no histopathological evidence of inflammation.

CONCLUSION:

1. From the study on validation of diagnostic accuracy of scoring systems for acute appendicitis, the scoring system which has high positive predictive value and high negative predictive value is considered best to diagnose as well as to rule out acute appendicitis based on the clinical scoring system.
2. It is the Alvarado score which is still considered best in terms of statistical equivalents and it is better than Appendicitis Inflammatory Response Score.
3. Tzanaki Score is the most easy to use score in emergency situations and low scores almost excludes acute appendicitis.

KEYWORDS:

Acute appendicitis, Alvarado score, Tzanaki score, RIPASA score, AIR score.